We claim:

1. An apparatus for monitoring layer depositions in a process chamber, comprising:

a light source;

a sensor element subjectable to deposition and growth of a deposition layer;

a light detector;

said sensor element having a region configured to absorb light to a significantly lesser extent than a remaining part of said sensor element, wherein an intensity of the light is measured in dependence on the region being grown over by a thickness of the deposition layer.

2. The apparatus according to claim 1, wherein said region is a continuous opening formed in said sensor element.

3. The apparatus according to claim 1, wherein said region is configured to influence the intensity of the light beam measured by the detector as the thickness of the layer grows on said sensor element.

4. The apparatus according to claim 1, wherein said detector is disposed outside the process chamber and the intensity of

the light from said light source is measured through a window formed in the process chamber.

5. The apparatus according to claim 1, wherein said light source is a separate light source generating a light beam.

6. The apparatus according to claim 5, wherein said light source is disposed in front of a window formed in process chamber in a line with said sensor element and said detector.

7. The apparatus according to claim 1, wherein said light source is a plasma luminous phenomenon in the process chamber.

8. The apparatus according to claim 1, which further comprises a tilting/rotating mechanism enabling said sensor element to be tilted/rotated out of a beam path of the light.

9. The apparatus according to claim 8, wherein said mechanism is enabled to tilt/rotate said sensor element out of a light path from a plasma luminous phenomenon defining said light source to said detector.

10. The apparatus according to claim 5, which further comprises a tilting/rotating mechanism enabling said sensor element to be tilted/rotated out of a beam path of said light beam from said light source to said detector.

11. The apparatus according to claim 1, which comprises further detector for measuring the intensity of the light from said light source not influenced by said sensor element.

12. The apparatus according to claim 1, wherein said region is formed with a spatial extent in a same order of magnitude as a maximum layer thickness to be determined with the apparatus.

13. The apparatus according to claim 2, wherein said opening is formed with a spatial extent in a same order of magnitude as a maximum layer thickness to be determined with the apparatus.

14. The apparatus according to claim 1, wherein said sensor element is a disk-type sensor with a first surface and a second surface, said region extends from said first surface to said second surface, and a diameter of said region varies.

15. The apparatus according to claim 2, wherein said sensor element is a disk-type sensor with a first and a second surface, said opening extends from said first surface to said second surface and a diameter of said opening varies.

16. The apparatus according to claim 1, wherein said sensor element is provided with a cooling device.

17. The apparatus according to claim 1, wherein said sensor element is provided with a heating device.

18. The apparatus according to claim 1, wherein said sensor element is one of at least two sensor elements and said light detector is one of at least two light detectors respectively associated with said sensor elements and configured to generate a measurement signal representing the intensity of the light transmitted by said sensors, and wherein an evaluation device is connected to said sensor elements for processing the measurement signals in dependence on one another.

19. In combination with a process chamber for depositing or removing layers, the apparatus according to claim 1 adapted and disposed to monitor a growth or a removal of the layers in the process chamber.

20. A monitoring method, which comprises providing an apparatus according to claim 1, monitoring a layer deposition in a process chamber with the apparatus, determining a cleaning cycle time of the process chamber from an intensity measurement of the light by comparing the measured light

intensity with one of a predetermined minimum intensity and a predetermined maximum intensity.